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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,596	08/25/2003	Chiao-Chung Huang	B-5221 621209-5	4262

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EXAMINER

ALIE, GHASSEM

ART UNIT PAPER NUMBER

3724

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,596

Applicant(s)

HUANG ET AL.

Examiner

Ghassem Alie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petroz (5,174,188). Regarding claim 1, Petroz teaches a precise cutting device for splitting a test piece 26 including a microscope 13a having a stage 22. Plaquette 26 is defined as a test piece. Petroz also teaches a base for positioning the precise cutting device and a support arm extending upward from the base. Petroz also teaches that stage 22 includes an opening and movably connected to the arm to support test piece 26. Petroz also teaches a lens set disposed on the top of the support arm, which is inherently adjustable to show the microstructure of test piece 26. Petroz also teaches a cutter 40 disposed under stage 22 of microscope 13a and passing through the opening to form notches on the surface of test piece 26. Petroz also teaches that cutter 40 inherently is disposed on the base. Cutter 40 is located under the stage 22 and connected to a platen 44 which is inherently supported by the base. It should be noted that the platen 44 is connected to a vertical tooth arm which is connected to the base. Therefore, cutter 40 is disposed on the base via platen 44. See Figs. 1-10 and col. 5, lines 24-68 and col. 6, lines 1-68 in Petroz. Petroz does not expressly teach that the cutter is fixed horizontally selective to the base. Petroz teaches that cutter 40 is adjustable horizontally and vertically. However, it would have been obvious to a person of ordinary skill in the art to keep the cutter immobile horizontally and consequently keep the cutter fixed horizontally

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selective to the base. Because, converting an adjustable device such as cutter 40 to an immobile and a non-adjustable device involves only routine skill in the art.

In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to omit the horizontal adjustment mechanism for the cutter and consequently keep the cutter immobile horizontally, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. It should be noted that cutter 40 can only be adjusted vertically, since Petroz teaches test piece 26 can be adjusted horizontally.

Regarding claim 2, Petroz teaches everything noted above including that stage 22 has a clip 46 to fix test piece 26 and a first position adjuster to shift the test piece horizontally within a predetermined area. Clamps 46 define as a clip, which fix test piece 26. Stage 22 is movable in translating along axis X, Y, and Z. Therefore, test piece 26 is capable of being shift horizontally within a predetermined area. See col. 5, lines 24-42 in Petroz.

Regarding claim 3, Petroz teaches everything noted above including a second position adjuster 44 disposed under the stage 22 elevating the vertical position of cutter 40 assembled thereon.

Regarding claim 4, Petroz teaches everything noted above including that cutter 40 has a diamond tip. See col. 7, lines 12-27 in Petroz.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petroz in view of Habeck et al. (3,812,748), hereinafter Habeck, or Nausbaum (3,812,748). Regarding claim 5, Petroz teaches everything noted above including that the

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cutter has diamond tip, but Petroz does not teach that the cutter could have a wheel knife at the tip. However, the use of cutters having a tip with a wheel knife is well known in the art such as taught by Habeck or Nausbaum. Habeck teaches a cutter for cutting a workpiece can be either from diamond, a sharp cutting knife, or a cutting wheel. See col. 1, lines 36-67 in Habeck. Nausbaum also teaches a cutter 20 having a cutting tip which is a cutting wheel 34. See Fig. 1-3 in Nausbaum. It would have been obvious to a person of ordinary skill in the art to provide Petroz cutting machine with the cutter having a cutting wheel as taught by Habeck or Nausbaum, since the cutter with the diamond tip functions the same as the cutter with the cutting wheel, since both cutting the workpiece or the test piece. In addition, according to the type of material to be cut, a cutter with the cutting wheel could be used instead the cutter with the diamond cutting tip.

4. Claims 6, 7, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petroz in view of Genser et al. (2002/0056345), hereinafter Genser, or Shirley et al. (5,974,903), hereinafter Shirley. Regarding claim 6, Petroz teaches everything noted above except that an image sensor disposed on the lens set for sending optical images and converting them into electronic signals, and a monitor electrically connected to the image sensor and displaying the electronic signal. However, the use of camera and monitor for displaying images of the workpiece or test piece is well known in the art such as taught by Genser or Shirley. Genser teaches an image sensor 17 disposed on a lens set for sending optical images and converting them into electronic signals, and a monitor 18 electrically connected to the image sensor and displaying the electronic signal. See Figs. 1-3 and col. 3, paragraphs 35-39 in Genser. Shirley also teaches an image sensor 34 disposed on a lens set

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for sending optical images and converting them into electronic signals, and a monitor 36 electrically connected to the image sensor and displaying the electronic signal. See Figs. 1-2 and col. 2, lines 1-67 in Shirley. It would have been obvious to a person of ordinary skill in the art to provide Petroz's cutting machine with the image sensor and the monitor as taught by Genser or Shirley in or to enhance the observation of the workpiece or the test piece.

Regarding claim 7, Petroz as modified above teaches everything noted above including that the image sensor is a charged-coupled camera. The camera inherently is a CCD camera. In addition, Official notice is taken that use of CCD camera is well known in the art such as taught by Fasanella et al. (6,672,939), hereinafter Fasanella. Fasanella also teaching an image sensor 670, which is CCD and a monitor 660 for displaying images of the workpiece to be cut. See Figs. 1-3 and col. 11, lines 1-12 in Fasanella.

Regarding claim 13, Petroz teaches everything noted above except a light source disposed on the base for lighting the test piece. However, the use of light source for lighting the workpiece to be cut is well known in the art such as taught by Genser. Genser teaches a light source 5 disposed on a base of a precise cutting device for lighting a test piece 4. See Fig. 1 and page 2, paragraph 31 in Genser. It would have been obvious to a person of ordinary skill in the art to provide Petroz's cutting machine with the light source as taught by Genser in order to illuminate the test piece and cutting zone of the test piece and subsequently facilitate the cutting operation of the test piece.

To the degree that it could be argued that it is not obvious to a person of ordinary skill in the art to eliminate the horizontal adjustment of cutter 40 and keep cutter 40 fixed horizontally with respect to the base, the rejection below is applied.

5. Claim 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petroz in view of Kapocsi (4,975,005). Regarding claim 1, Petroz teaches a precise cutting device for splitting a test piece 26 including a microscope 13a having a stage 22. Plaquette 26 is defined as a test piece. Petroz also teaches a base for positioning the precise cutting device and a support arm extending upward from the base. Petroz also teaches that stage 22 includes an opening and movably connected to the arm to support test piece 26. Petroz also teaches a lens set disposed on the top of the support arm, which is inherently adjustable to show the microstructure of test piece 26. Petroz also teaches a cutter 40 disposed under stage 22 of microscope 13a and passing through the opening to form notches on the surface of test piece 26. Petroz also teaches that cutter 40 inherently is disposed on the base. Cutter 40 which is located under the stage 22 is connected to a platen 44 which is inherently supported by the base. Therefore, cutter 40 is disposed on the base via platen 44. It should be noted that the platen 44 and the vertical tooth arm connected to platen 44 are part of cutter 40 as shown in Fig. 6. See Figs. 1-10 and col. 5, lines 24-68 and col. 6, lines 1-68 in Petroz. Petroz does not expressly teach that the cutter is fixed horizontally selective to the base. However, the use of cutting mechanism which is fixed horizontally and is movable or adjustable vertically is well known in the art such as taught by Kapocsi. Kapocsi teaches a cutter 24 which is disposed on a base 10 under a stage 14 and passes through an opening 13 to form notches on the surface of a test piece 41, wherein cutter 24 is fixed horizontally selective to base 10. See Figs. 1-3 and col. 2, lines 25-68 and col. 3, lines 1-40 in Kapocsi. It would have been obvious to a person of ordinary skill in the art to keep the cutter of Petroz's cutting machine fixed horizontally as taught by Kapocsi, in order to eliminate the horizontally adjusting mechanism

of the cutter and decrease the cost of manufacturing the cutting machine. It should be noted that cutter 40 is not the only component of the precise cutting device that is horizontally adjusted. Test piece 26 also has a horizontally adjustment mechanism which adjust the test piece horizontally with respect to the cutter. Therefore, elimination of horizontal adjustment mechanism for the cutter does not affect precision cutting of the test piece.

Regarding claim 2, Petroz teaches everything noted above including that stage 22 has a clip 46 to fix test piece 26 and a first position adjuster to shift the test piece horizontally within a predetermined area. Clamps 46 define as a clip, which fix test piece 26. Stage 22 is movable in translating along axis X, Y, and Z. Therefore, test piece 26 is capable of being shift horizontally within a predetermined area. See col. 5, lines 24-42 in Petroz.

Regarding claim 3, Petroz teaches everything noted above including a second position adjuster 44 disposed under the stage 22 elevating the vertical position of cutter 40 assembled thereon.

Regarding claim 4, Petroz teaches everything noted above including that cutter 40 has a diamond tip. See col. 7, lines 12-27 in Petroz.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petroz in view of Kapocsi, as applied to claim 1, and in further view of Habeck or Nausbaum. Regarding claim 5, Petroz teaches everything noted above including that the cutter has diamond tip, but Petroz does not teach that the cutter could have a wheel knife at the tip. However, the use of cutters having a tip with a wheel knife is well known in the art such as taught by Habeck or Nausbaum. Hakbeck teaches a cuter cutter for cutting a workpiece can be either from diamond, a sharp cutting knife, or a cutting wheel. See col. 1,

lines 36-67 in Hacbeck. Nausbaum also teaches a cutter 20 having a cutting tip which is a cutting wheel 34. See Fig. 1-3 in Nausbaum. It would have been obvious to a person of ordinary skill in the art to provided Petroz cutting machine, as modified by Kapocsi, with the cutter having a cutting wheel as taught by Habeck or Nausbaum, since the cutter with the diamond tip functions the same as the cutter with the cutting wheel, since both cutting the workpiece or the test piece. In addition, according to the type of material to be cut, a cutter with the cutting wheel could be used instead the cutter with the diamond cutting tip.

7. Claims 6, 7, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petroz in view of Kapocsi, as applied to claim 1, and in further view of Genser or Shirley. Regarding claim 6, Petroz teaches everything noted above except that an image sensor disposed on the lens set for sending optical images and converting them into electronic signals, and a monitor electrically connected to the image sensor and displaying the electronic signal. However, the use of camera and monitor for displaying images of the workpiece or test piece is well known in the art such as taught by Genser or Shirley. Genser teaches an image sensor 17 disposed on a lens set for sending optical images and converting them into electronic signals, and a monitor 18 electrically connected to the image sensor and displaying the electronic signal. See Figs. 1-3 and col. 3, paragraphs 35-39 in Ganser. Shirley also teaches an image sensor 34 disposed on a lens set for sending optical images and converting them into electronic signals, and a monitor 36 electrically connected to the image sensor and displaying the electronic signal. See Figs. 1-2 and col. 2, lines 1-67 in Shirley. It would have been obvious to a person of ordinary skill in the art to provide Petroz's cutting machine, as modified by Kapocsi, with the image sensor and the monitor as taught by Genser

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or Shirley in or to enhance the observation of the workpiece or the test piece.

Regarding claim 7, Petroz as modified above teaches everything noted above including that the image sensor is a charged-coupled camera. The camera inherently is a CCD camera. In addition, Official notice is taken that use of CCD camera is well known in the art such as taught by Fasanella et al. (6,672,939), hereinafter Fasanella. Fasanella also teaching an image sensor 670, which is CCD and a monitor 660 for displaying images of the workpiece to be cut. See Figs. 1-3 and col. 11, lines 1-12 in Fasanella.

Regarding claim 13, Petroz teaches everything noted above except a light source disposed on the base for lighting the test piece. However, the use of light source for lighting the workpiece to be cut is well known in the art such as taught by Genser. Genser teaches a light source 5 disposed on a base of a precise cutting device for lighting a test piece 4. See Fig. 1 and page 2, paragraph 31 in Genser. It would have been obvious to a person of ordinary skill in the art to provide Petroz's cutting machine, as modified by Kapocsi, with the light source as taught by Genser in order to illuminate the test piece and cutting zone of the test piece and subsequently facilitate the cutting operation of the test piece.

Response to Amendment

8. Applicant's arguments filed on 02/10/05 have been fully considered but they are not persuasive.

Applicant's argument that Petroz does not teach that the cutter is fixed horizontally selective to the base is not persuasive. Petroz teaches that cutter 40 inherently is disposed on the base. Cutter 40 is located under the stage 22 and is connected to a platen 44 which is inherently supported by the base. It should be the vertical tooth arm, which is connected to platen 44, is

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part of the base since it is connected to the base. See Fig. 6 in Petroz. Therefore, cutter 40 is disposed on the base via platen 44. Petroz does not expressly teach that the cutter is fixed horizontally selective to the base. Petroz teaches that cutter 40 is adjustable both horizontally and vertically. However, it would have been obvious to a person of ordinary skill in the art to keep the cutter horizontally immobile and consequently keep the cutter fixed horizontally selective to the base. Because, converting an adjustable device such as cutter 40 to an immobile and a non-adjustable device involves only routine skill in the art. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to omit the horizontal adjustment mechanism for the cutter and consequently keep the cutter immobile horizontally, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. It should be noted that cutter 40 is not the only component of the precise cutting device that is horizontally adjusted. Test piece 26 also has a horizontally adjustment mechanism which adjust the test piece horizontally with respect to the cutter. Therefore, elimination of horizontal adjustment mechanism for the cutter does not affect precision cutting of the test piece.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Turner (5,820,006) and Xu et al. (6,513,694) teaches a precise cutting device.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ghassem Alie whose telephone number is (571) 272-4501. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan Shoap can be reached on (571) 272-4514. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information

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about the PAIR system, SEE <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (too-free).

GA/ga

April 26, 2005



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